PerkinElmer™
optoelectronics



EVERYTHING

IN A

NEW

LIGHT.

MP 900

Ultra High Sensitivity Gateable Photon Counting Module

Description

The Photon Counting Head MP 900 series is designed for applications in all fields of single photon detection, e.g. chemoluminescence, bioluminescence, in-vitro assay, environmental measurements or pure research. It is an easy to use module, containing the Channel Photomultiplier, a high voltage power supply, a discrimination amplifier and a pulse shaper for fast output pulses. An installed active quenching systems avoids over-illumination to the detector. It is also possible to apply an external gate function for time correlated photon counting. Strong variations in light levels are possible due to the high dynamic range of the installed CPM. The exceptional low noise and high sensitivity facilitates detection of extremely low light levels.

Features

- Very low noise, typical 10 cps,
- High dynamic range up to 6 orders of magnitude
- High reliability
- No cooling requirement
- Very high stability in noise level, no sudden "bursts"
- High stability over time
- Rugged and compact design
- Gateable CPM input for time resolved measurements
- Active quenching circuit for high light protection
- Extremely fast high light recovery times
- 5 volts supply voltage

PerkinElmer™
optoelectronics

PerkinElmer optoelectronics

Specification *)

Detector

Detector type	**CPM-Channel Photomultiplier**				
Model *)	**MP 942**	**MP 943**	**MP 944**	**MP 952**	**MP 962**
Installed CPM type	C 942 P	C 943 P	C 944 P	C 952 P	C 962 P
Photocathode diameter	min. 5 mm				
Photocathode material	Bialkali	Bialkali	Bialkali	Multialkali	Multialkali
Window material	Quartz	UV-glass	Boro	Quartz	Quartz
Spectral response / nm	165-650	185-650	300-650	165-750	165-850
Quantum efficiency	20% typical				
Dark counts (typ.)	10 cps	10 cps	10 cps	50 cps	100 cps

P Version					
Model	MH 942P	MH 943 P	MH 944 P	MH 952 P	MH 962 P
Installed CPM type	C 942 P	C 943 P	C 944 P	C 952 P	C 962 P
Dark counts (typ.)	10 cps	10 cps	10 cps	50 cps	100 cps

*) Additional models on request

Photon Counting Electronics Data

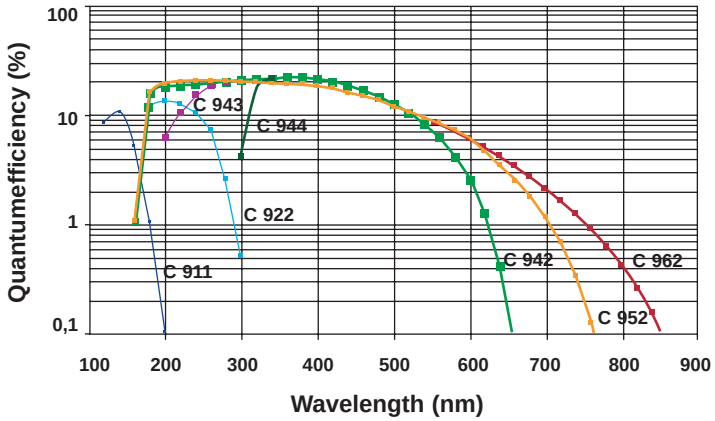
Linear count rate	5 MHz
Output pulse	TTL, positive
Over-illumination protection	active quenching control
Output impedance	50 ohms
Supply voltage	+5 to +5.5 V DC
Active Quenching Control	TTL-Pulse, active high,
	RESET: internal via timer, typ. 0,5 s
	external via TTL-pulse
Output pulse width	adjustable, min. 15 ns, max. 1 μs
Input current at max. count rate	< 250 mA
GATE voltage V_{gate}	TTL-level: h to l set time V_{ca} to $V_{ch\text{-}ent}$ +100 V : ≈ 150 μs
	TTL-level: l to h set time V_{ca} to $V_{ch\text{-}ent}$ - 100 V : ≈ 150 μs

Maximum Ratings

Input voltage	+5.5 V
Operating temperature	5 to 40 °C
Storage temperature	-20 to 50 °C
Weight	approx. 390 g

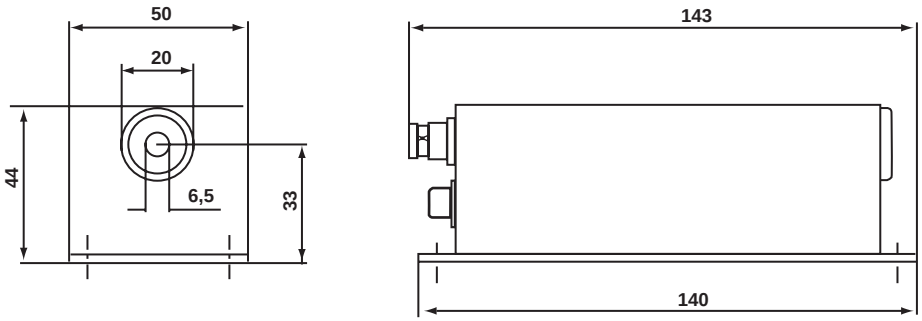
PerkinElmer™ optoelectronics

Typical Spectral Response



Mechanical Specifications

Dimensions in (mm)



Input/Output Signals: Connections

DB Connector

- 1 (red) 5V
- 3 (black) Gnd
- A1 (coax) External Gate In
- 2 (yellow) Monitor voltage ($V_{ch\text{-}ent}$)
- 4 (green) Not connected

BNC Connector

- TTL Signal Output
- GND

CAUTION: High Voltage Warning

This product operates at high voltage. Extreme care must be taken to ensure operator safety and to avoid damage to other instruments. Avoid direct contact with the entrance window of the built in CPM when high voltage is applied. Avoid placing conductive material close to the cathode.

For more information e-mail us at opto@perkinelmer.com or visit our web site at www.perkinelmer.com/opto

All values are nominal; specifications subject to change without notice.

PerkinElmer™ optoelectronics

PerkinElmer Optoelectronics
2175 Mission College Blvd.
Santa Clara, CA 95254
Phone: 408) 565-0830
Fax: (408) 565-0703

PerkinElmer Optoelectronics
47 Ayer Rajah Crescent #06-12
Singapore 139947
Phone: +65 775-2022
Fax: +65 777-2196

PerkinElmer Optoelectronics
Wenzel-Jaksch-Str. 31
D-65199 Wiesbaden
Germany
+49 (611) 492-0
+49 (611) 492-369

©2000 PerkinElmer, Inc.
All rights reserved.
0900

PerkinElmer™ is a registered trademark of PerkinElmer, Inc.